Multifunctional photo-initiator (1 gram) was added to diurethane dimethacrylate resin (10g). Dimethyl aminoethyl methacrylate (DMAEMA, 0.1 grams) was added as a co-initiator. After exposure to bright blue light for 40 seconds, thin films of the resin had hardened, indicating a significant level of polymerization had occurred.

CLAIMS

What is claimed is:

1. An initiator of anodic free-radical polymerization that is sensitized to visible light irradiation and provides multiple initiator functionality sites on each molecule or molecular complex.

2. The initiator in claim 1 in which the substrate of the molecular complex is a ceramic particle.

3. The initiator in claim 1 in which the substrate is a polymeric particle.

4. The initiator in claim 1 in which the substrate is a macromolecule.

5. Mixtures of said multi-functional photo-initiator in ethylenically unsaturated organic monomer.

ABSTRACT

Type II photoinitiators interact with co-initiating agents to initiate polymerization in ethylenically unsaturated resins when exposed to irradiation. In the current invention, said photoinitiators are bound to the surface or synthesized on the surface of polymer or inorganic particles or molecules, creating a complex which is multifunctional with respect to the photo-initiating capability. The mixture of said photoinitiator in said monomer/co-initiator mixture will demonstrate a low level of elution of initiator species from the cured polymer in liquid media.